

REVIEW

Hawai'i's Ferns and Fern Allies, by Daniel D. Palmer. 2003. University of Hawaii Press, Honolulu. ix, 325 pp. illus. Hardcover [ISBN 0-8248-2522-5] \$60.00.

Daniel D. Palmer, longtime resident of Hawaii, and dermatologist by profession, has spent much of his spare time studying the local ferns and has now published the results of these efforts in this exceptionally well prepared and useful guide to the Hawaiian pteridophytes. Amateurs, fern enthusiasts, field biologists, professional botanists as well as all those interested in the Hawaiian biota can now benefit from his work.

It has been a long wait. The first and only comprehensive publication on the Hawaiian pteridophytes was published in 1888 by William Hillebrand in his *Flora of the Hawaiian Islands*. Winifred Robinson, in 1912–1914, published, in four parts, *A Taxonomic Study of the Pteridophyta of the Hawaiian Islands* that was incomplete, inadequate and proved not to be particularly helpful in the identification of the ferns. Since then, those interested in the Hawaiian ferns and fern allies have had to rely on a series of checklists by various authors, a few published, but many duplicated and distributed informally. Each list is different and it is often difficult to compare listed binomials in one list to those in another. A few illustrated booklets have been published, but these included only a few of the ferns. It has indeed been difficult to identify the local ferns in the absence of a comprehensive, contemporary publication.

Palmer has come to our assistance with the publication of this manual. He presents us with a survey of all species recorded on the Islands. A total of 221 taxa are recognized and included in the book, each one is described and virtually each is accompanied by an illustration. Palmer has had to decide which families, genera and species to recognize, and not all fern taxonomists will agree with his decisions, but he provides a clear justification for his choices. A key to the genera of the ferns and one to the genera of the fern allies precedes the alphabetically arranged generic treatments. There is a description for each genus. Each species treatment provides the scientific name, its etymology, whether endemic, indigenous or naturalized, a listing of the published synonyms as well as unpublished names found in the widely circulated checklists (I find this particularly helpful), the vernacular names, followed by a description with the distinguishing characters in bold type. The habitat and distribution is given following the description, as is also a discussion of existing problems. The final paragraph, in bold type, gives a short diagnostic description. Silhouettes and line drawings accompany the species treatment.

Many readers will find the “Quick-and-Easy” guide to the genera helpful. Following this tool, the user can reduce the choices of genera to a few that

can then be checked against the descriptions and the illustrations. No other manual of Hawaiian pteridophytes has included illustrations of the species as in this publication. These are a valuable addition and a great aid in identification. Family descriptions and keys to the included genera are found in the Appendix. Here, also, is a glossary as well as an illustrated glossary. A list of references and index to scientific and vernacular names concludes the volume.

The Hawaiian pteridophyte flora includes 194 species, in 73 genera and 27 families. Of these 161 are native species, and 114 (71%) of them are endemic. There are 33 naturalized species now known to be growing in the Islands. The high endemicity reflects the isolation of the island group. Adaptive radiation into different island environments has led to speciation. Variability is common in many Hawaiian species and gives rise to taxonomic problems. The genera *Dryopteris* and *Asplenium* serve as prime examples of this variation. In such cases, Palmer describes, and frequently illustrates, the variation in the species and groups together species that are morphologically similar and appear to be related. He has brought structure to what has been confusing. Palmer acknowledges the influence of Warren Herb Wagner. Herb was his mentor, encouraged his study, and frequently joined him in the field. Palmer traveled extensively, consulted herbaria throughout the world, examined type specimens and conferred with fern specialists. This manual reflects the extensive research done by Palmer, and it is clearly his individual work. Not all the taxonomic problems have been solved, but when more study is needed this is clearly indicated. This work brings together information that can serve as the catalyst for many studies.

Hawai'i's Ferns and Fern Allies is a long awaited and much requested manual of the Hawaiian pteridophytes. Here, in one volume, is a guide to all of the fern and fern allies of the Islands that will be welcomed by professionals and amateurs alike. This manual is well researched, detailed and comprehensive. It is an essential addition to the library of all those interested in pteridophytes as well those interested in Hawaiian plants and in island floras.—KENNETH A. WILSON, Museum of Natural History of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007.